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Date

Karen Taragowski
NameKaren Taragowski
Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/939,005	Confirmation No:	3418
Applicants	:	Jason D. Hibbeler, et al.		
Filed	:	08/24/2001		
TC/A.U.	:	2193		
Examiner	:	Anil KHATRI		
Docket No.	:	POU920010019US1		
Customer No.	:	23334		

VIA FACSIMILE (571) 273-8300

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria VA 22313-1450

Attention: Examiner KHATRI Tel (571) 272-3725

RESPONSE UNDER 37 C.F.R. § 1.111

Sir:

The following amendment is being submitted in response to the Office Action dated June 15, 2005. Please enter and consider the following amendment and remarks as follows:

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REMARKS/ARGUMENTS

Applicants have studied the Office Action dated June 15, 2005. It is submitted that the application, as previously amended, is in condition for allowance. Claims 1-19 are pending. Reconsideration and allowance of the pending claims in view of the following remarks is respectfully requested.

Rejection under 35 U.S.C. §102(b)

On page 2 of the Office Action, the Examiner rejected claims 1-19 under 35 U.S.C. § 102(b) as being anticipated by Bogle et al (U.S. Patent No. 6,353,923). The claims have not been amended to overcome the cited prior art.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Amended independent claim 1 recites, *inter alia*:

...
for: using DPCL (Dynamic Probe Class Library) instrumentation
selecting at least one function and/or CPU usage in a
target application to be traced;
attaching a -p and/or -pg flag to the at least one function
or CPU usage;
running at least part of the target application; and
writing one or more results of the at least one function
and/or CPU usage with the attached -p and/or -pg flag in a
gmon.out format.

The present invention is a method, a system and computer readable medium for characterizing a target application using DPCL (Dynamic Probe Class Library) instrumentation, without the need for the source code, or any recompiling or relinking.

The invention utilizes -p and -pg flags that, in a UNIX, C, or C++ compiler, cause the compiler to insert control code into a compiled target in order to cause the target to write out information about function-call sequence and performance. See page 13, lines 22-26 of the instant specification. This control code is known as "instrumentation code". See page 19, lines 11-15 of the instant specification. The information that is

gathered consists of: which functions were called by which other functions, how many times were those functions called, and how much time was spent in each function. This information is written in "gmon.out" format, which is a standard binary file format that UNIX performance-analysis tools can read. See page 16, line 18 through page 17, line 10. **The present invention uses DPCL (a software application developed at IBM) to insert and remove equivalent code (equivalent to target code that is inserted by the compiler when -p or -pg options are present) into a compiled target dynamically, so that information can be gathered from a running application without the need to re-compile the application.** See page 19, lines 11-15 of the instant specification.

The subject matter of the Bogle et al. reference is dissimilar to the present invention. The Bogle et al. reference deals with debugging across multiple platforms. Bogle et al. describes activating a debugging environment so that a script can be run in that **separate** virtual environment. Bogle et al., col. 4, lines 10-18. Bogle et al. uses "language neutral debugging," where a host on which a script is running is responsible for breakpoint control and presentation of the underlying source-code to the debugging environment. Bogle et al., col. 3, lines 30-51.

Although "debugging" is not specifically described in the Bogle et al. reference, debugging in relation to software applications is understood to indicate the action of watching an application run, monitoring variable values, and stepping through lines of source code, with the purpose of insuring the correct behavior of the software application. The use of the term "debugging" in the Bogle et al. reference is consistent with this definition. See Bogle, col. 3, lines 30-51. This is a very different activity from performance profiling and execution tracing, which is the object of the present invention.

The present invention uses DPCL software that allows a user to insert executable code dynamically **into** an application to provide dynamic control of the target application. Importantly, DPCL is used for achieving the same effect dynamically as would be achieved by re-compiling some or all of the source code for a target application with

special UNIX compiler flags (-p and/or -pg) and then re-linking the application and running it. Therefore, the claimed function of "using DPCL instrumentation" does not define the dynamic control of an application, but instead defines the ability to write out performance data in gmon.out format without having to stop, re-compile, re-link, and re-run a target application, which is a requirement in the Boggle et al. reference.

Bogle is completely silent on the use of IBM's DPCL. The Examiner, on page 2 of the Office Action, points to Bogle, col. 77, lines 11-15. The Applicants respectfully submit that the Examiner is confounding "dynamically activating said debugger environment" as taught by Bogle, with "using DPCL (Dynamic Probe Class Library) instrumentation" of the present invention.

Additionally, Bogle is completely silent on Gmon.out. The Examiner, on page 2 of the Office Action, points to Bogle, col. 28, line 45. The Applicants respectfully submit that the Examiner is confounding "Flags associated with the scriptlet" as taught by Bogle, with "writing one or more results...in a gmon.out format" of the present invention.

Furthermore, Bogle is completely silent on specific compiler flags -p and/or -pg. The Examiner, on page 2 of the Office Action, points to Bogle, col. 22, lines 63-64. The Applicants respectfully submit that the Examiner is confounding "Option flags associated with the interruption" as taught by Bogle, with "attaching a -p and/or -pg flag to the at least one function of the CPU usage" of the present invention.

The Examiner cites 35 U.S.C. § 102(b) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims as being anticipated by Bogle et al.¹ Because the elements in independent claims 1, 9, and 17 of the instant application are not taught or disclosed by Bogle et al., the apparatus of Bogle et al. does not anticipate the present invention. The dependent

¹ See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

claims are believed to be patentable as well because they all are ultimately dependent on either claim 1, 9, and 17. Accordingly, the present invention distinguishes over Bogle et al. for at least this reason. The Applicants respectfully submit that the Examiner's rejection under 35 U.S.C. § 102(b) has been overcome and the rejection should be withdrawn.

CONCLUSION

The remaining cited references have been reviewed and are not believed to affect the patentability of the claims as amended.

In this Response, Applicants have amended certain claims. In light of the Office Action, Applicants believe these amendments serve a useful clarification purpose, and are desirable for clarification purposes, independent of patentability. Accordingly, Applicants respectfully submit that the claim amendments do not limit the range of any permissible equivalents.

Applicants acknowledge the continuing duty of candor and good faith to disclosure of information known to be material to the examination of this application. In accordance with 37 CFR §1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and their attorneys.

Applicants respectfully submit that all of the grounds for rejection stated in the Examiner's Office Action have been overcome, and that all claims in the application are allowable. No new matter has been added. It is believed that the application is now in condition for allowance, which allowance is respectfully requested.

PLEASE CALL the undersigned if that would expedite the prosecution of this application.


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09/939,005

Respectfully submitted,

Date: July 27, 2005

By: 
Scott Smiley, Reg. No. 55,627
Attorney for Applicants

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09/939,005

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MESSAGE:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jason D. HIBBELER et al.

Serial No.: 09/939,005

For: *DYNAMIC CPU USAGE PROFILING AND FUNCTION CALL TRACING*

Enclosed are the following:

Transmittal letter (1 pg.); and Response (6 pgs.)

Exhibit C

Docket No.: POU920010019US1

140-A01-001

August 3, 2005

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MESSAGE:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jason D. HIBBELER et al.
Serial No.: 09/939,005
For: DYNAMIC CPU USAGE PROFILING AND FUNCTION CALL TRACING

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Docket No.: P05920010019US1 140-A01-001 August 3, 2005

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Exhibit D